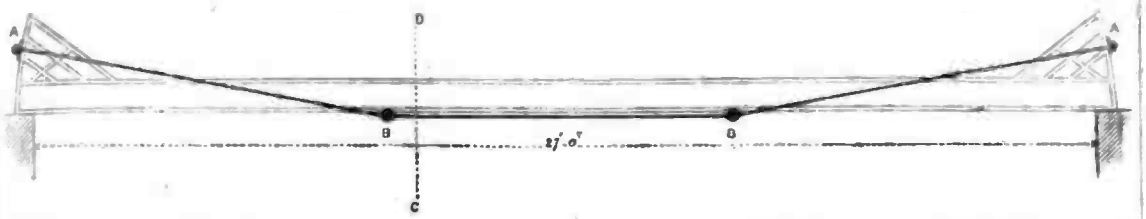
ELEVATION OF GIRDER.



EXPERIMENTS ON A GIRDER TRUSSED WITH WROUGHT-IRON RODS.

THE following experiments made at Mr. Cubitt's works, Thames Bank, on a girder trussed with wrought-iron rods, will be found to supply important deductions, and claim the serious attention of engineers, especially of some who are at this moment about to use girders trussed precisely in the manner which these experiments shew to be worse than useless.

The girder was of cast-iron 28 feet long, 10 inches in depth, parallel, and of the same section throughout; a strong frame was cast upon the ends of it, in order that the inclination of the tension rods might be varied, or rather that the ends of them might be raised to different heights above the bottom flange.

The tension rods were of wrought-iron, 1 inch in diameter, one on each side of the girder, attached at the points BB to iron pins 2 inches in diameter, which passed under the bottom flange; at the points AA they were connected by means of plates clipping the ends of the girder, and tightened up by nuts and screws.

A weight of four tons was placed upon the centre of the girder, and the deflexion (2 inches and 1-8th) carefully taken. The tension rods were then put on and applied in various places, and the weight required to produce the same deflexion is given in the following table: the distance of bearings was in all cases 27 feet.

No. of Experiment.	Distance of points AA above the bottom of girder.	Distance of points BB on centre of pins below the bottom of girder.	Weight required to produce the same deflexion of 2¼ inches.	
	Inches.	Inches.	Tons.	Cwt.
1	30	1	3	19
2	24	1	4	0
3	18	1	4	1
4	10	1	4	11
5	24	6¼	4	8
6	10	6¼	6	1
7	5	6¼	5	12

After the above experiments had been made, the tension rods were removed, and the deflexion with four tons was found to be the same as at the commencement.

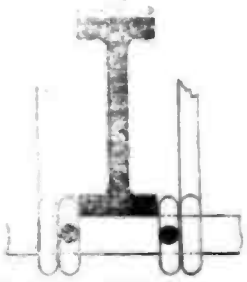
Our readers will observe that, strange as the fact may appear, when one end of each tension rod was 30 inches above the bottom of the girder and the other end one inch below the bottom, the same deflexion was produced by one cwt. less than when there were *no rods*.

When the distance of the points AA above the bottom of the girder was lessened to 10 inches, and the distance of the points of suspension (BB) *below* the bottom of the girder was increased to 6¼ inches, the girder was strengthened 50 per cent.

In some girders recently put up, the points of suspension are actually *above* the bottom flange, and serve with other arrangements to weaken the girders, at considerable cost, instead of strengthening them; while they give a false assurance of strength, which, under some circumstances, may lead to very serious results.

BLIND BUILDERS.—The following tenders for two cottages, to be built in Southmolton, Devon, says a correspondent, are worthy of notice:—

Cock	£170
Henry Baker	129
Smyth (accepted)	90



SECTION THROUGH C—D ENLARGED.

NOTES IN THE PROVINCES.

THE New Catholic Church of St. Osmund, at Salisbury, is fast approaching completion. The roof of the chancel has been highly decorated and emblazoned in colours and gold; and a carved oak altar-screen is being thrown across to divide the chancel from the body of the church. The bell tolled for the first time on Tuesday week, for the funeral of the late Mr. John Peinston, for many years the county surveyor.——Scaffolding for the pointing of the spire of the cathedral at Salisbury, is being put up. From a platform round it, immediately below the weather door, the workmen will be lowered as the work may require.——The Chapel of Plush, in the parish of Buckland Newton, Dorset, has been rebuilt, and will shortly be consecrated.——There is a suspension of divine service at Honiton New Church, owing to the unsafe state of the roof.——The first stone of that one of the two Corn Exchanges now being built at Worcester, which is to occupy the old site, was laid on Wednesday week. Some time, according to the local journal, has been occupied in perfecting the foundations: in the first place, by erecting a wall around the whole area of the building, at a distance of about a foot and a half outside the foundation walls, the space between the two walls forming a dry air chamber, for the obviation of the damp which is often arising in the walls of large rooms; and in the second by the construction of recesses, that hot air may be introduced into the rooms when required, and the ventilation be kept uniform and perfect.——A site near Abergavenny has been purchased for the erection of the new Lunatic Asylum for Herefordshire and adjoining districts. At the sessions recently it was stated, that Mr. Fulljames, the architect, had prepared a rough estimate for the erection of the building for 200 patients, at the sum of 21,200*l.*, and afterwards another for 212 patients at 24,300*l.* This being a great excess upon the former estimate, the committee referred the matter to the commissioners in London. Their consulting architect suggested several improvements, and though there was a portion of the money to be expended in ornament, according to Mr. Fulljames' plan, thought that there were more projections and more staircases than necessary, and that the whole might be completed at 100*l.* per patient. Mr. Fulljames was accordingly requested to correct his plan in conformity with the suggestion of the Commissioners of Lunacy.——On Tuesday week, the new church at Hixon, near Stafford, erected at the expense of Earl Talbot, was consecrated. A parsonage house adjacent has also been erected.—— It was recently stated that there are 1,000 untenanted houses in the township of Toxteth Park, Liverpool. ——The new Independent Chapel in Cavendish-street, Manchester, erected by the congregation of the Moseley-street Chapel, from the designs of Mr. E. Walters, of Manchester, was opened on Thursday week. This chapel, which comprises nave, transepts, side aisles, and apse, with a lofty tower and spire at the south-west corner, and is capable of accommodating 1,500 adults, and 380 children, has been erected in fifteen months, at a total cost of nearly 11,000*l.* The style, as we have before noticed, is the early English, and the principal windows are filled in with stained glass. The schools in connection with it, for 1,000 children, at an estimated cost of 5,000*l.*, are about to be commenced. Including 6,000*l.* for land, the total expenditure on this mass of building will be 22,000*l.* —— On Saturday week the stonework of Bridlington New Pier was finished, when the contractors gave the workmen a bountiful refreshment, to commemorate the occasion. The pier is 500 yards long.——A monument has been erected in Berechurch Church, for Sir Henry Smyth, Bart., M.P., designed and executed by Mr. J. Edwards, of London. It is 9 feet high by 4 feet 6 inches, of Carrara marble, and comprising a group of three figures—a female in alto-relievo, and two angels in thin relief. The inscription is on Sicilian marble.——The new Corn Exchange at Saffron Walden, noticed on 17th ult. in THE BUILDER, is now in active progress. The south wall appears at nearly its full height, and the east and north sides are in a very forward state, so that the building will at least be fit for occupation on 29th September. It is to be in the Italian style of architecture, surmounted by a bold clock-tower, supported by Doric columns, and will consist of sixteen corn merchants' offices, a committee-room in the angle, and public reading-room in the north-east end; these enclosing an 11 ft. covered ambulatory round the area, and leaving a clear opening in the centre of 25 ft. by 35 ft. The intended new post-office is in a still more forward state as to the external walls, which are continuous from the south front of the Exchange, and corresponding in style of architecture, from a design by Mr. William Beck, of London, architect. The post-office itself will be under a colonnade, supported by two Doric columns, with a passage, and pilasters, surmounted by a public room, with a waiting room, &c., at the rear. On these buildings Mr. Erswell has about eighty men at work. The entire cost of the Exchange will be about 2,500*l.*, independently of the post-office and public room, which will cost about 1,200*l.* A new savings' bank office is about to be erected contiguous to the above, in a similar style of architecture, and to cost about 900*l.*

EXEMPTION FROM BRICK DUTY.—In the Court of Queen's Bench, in the sittings at Nisi Prius, after Trinity Term, at Westminster, before the Lord Chief Baron and a special jury, in the case of the Attorney-General *v.* Walker, the question was raised, whether in the erection of any bridge, for the purpose of passing over newly-made drains, parapet-walls, and other small erections for the public safety, or for the support of any such bridge, were to be regarded as drain-bricks, which, under the 2nd and 3rd Vict. c. 24, an Act for draining certain wet lands and marshes in Lincolnshire, are exempt from duty. The jury gave a verdict for the defendant.

Copyrighted PDF Compression and OCR go to our website